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a. If letter or memo:

To:
From:
Subject:

b. If report:

Title: MONTHLY ACTIVITY REPORT -
ANALYTICAL CHEMISTRY BRANCH
MARCH 21, 1969 - APRIL 20, 1969

4. Document Date:

APRIL 28, 1969

c. If publication:

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5. Summary (2-3 lines indicating the major subject(s) of the document): Report on routine analysis of biological samples, water samples, air and dust samples; whole body counts; on the continued research work on combined Ra, Th & Ac procedure; on different papers published.

6. Name and telephone number of person completing form: Anjan K. Majumder (208) 525-0206	7. Organization: Lockheed Idaho Technologies Co.	8. Date: May , 1995
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HUMAN RADIATION EXPERIMENTS

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	NEW NAME	RADIOLOGICAL AND ENVIRONMENTAL SCIENCES LABORATORY, FILES OF DOUG CARLSON, DIRECTOR
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CROSS REFERENCES:

ITEMS OF INTEREST:

* A NEW COLLECTION NAME REPLACED THE ORIGINAL DUE TO
REORGANIZATION OF RECORD SERIES

April 23, 1969

George L. Voelz, M.D., Director
Health Services Laboratory

MONTHLY ACTIVITY REPORT - ANALYTICAL CHEMISTRY BRANCH
March 21, 1969 - April 20, 1969

ROUTINE

Biological Samples (urine, feces, soil, etc.)	355
Water Samples (potable, effluent, etc.)	554
Air & Dusts (carbon cartridges, filters, etc.)	590
Whole Body Counts	15

RESEARCH

Research on determination of transuranium elements in process solutions and environmental samples has been completed and a manuscript is about ready to be submitted for publication. A new procedure for determination of polonium-210 has been developed that will be applicable to its simultaneous determination with both protactinium-231 and the transuranium elements.

Continued research on Combined Ra, Th & Ac Procedure. Studied polonium, radium, and actinium as interferences. Studied the effects of acid and chloride concentration and digestion time on the carrying of polonium-210 on $PbSO_4$. Separated actinium-228 tracer.

A systematic investigation was continued to identify the cause of low radon recoveries. Results were not entirely conclusive but seem to indicate that desorption efficiency is inversely proportional to the total radon activity absorbed.

Completed a paper entitled "Dose Estimates and Recommendations Concerning the Possible Ingestion of Several Radionuclides by Human Volunteers." The write-up should serve as a basis for scoping experiments involving the ingestion of radionuclides.

Continued research on the combined method for uranium and plutonium in urine and feces. Yields have been as high as 95% and at other times much lower. There seems to be two likely spots for trouble, poor dissolution of sample after wet-ash and possible pyrophosphates, and loss of activity due to sublimation of ammonium perchlorate and/or ammonium sulfate. A scrub with xylene on the strips should help remove any entrained liquid amine which could supply the ammonium ion.

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FOLDER

ANALYTICAL CHEMISTRY BRANCH

1958-1972

SPECIAL ACTIVITIES

Continued work with the computer programs in converting programs to the new 360 computer. Seven different programs for reducing data from the spectrometers and other counting equipment have been counted and tested. Worked on some tapes from actual human exposures, feeding them into PRIPLET program.

Two papers from the Analytical Chemistry Branch were printed in the March, 1969 (Vol. 16) issue of Health Physics:

"Two Studies of Acute Internal Exposure to Man Involving Cerium and Tantalum Radioisotopes," by Claude W. Sili, George L. Voelz, Dale G. Olson and Jesse I. Anderson.

"An Integrating Air Sampler for Determination of ^{222}Rn ," by Claude W. Sili.

A patent was issued to Dale G. Olson and Jesse I. Anderson for their "Rotational Technique for Assessing Quantity and Distribution of Body Radioactivity."

WHOLE BODY COUNTING ACTIVITIES

Whole body counts at the Health Services Laboratory were as follows: 6 routine and 10 termination.

VISITORS

Senator Len Jordan and Congressman Orval Hansen visited the Analytical Chemistry Branch on Friday, April 11, 1969.

On Friday, April 13, the Branch had some visitors in connection with the meeting held in Idaho Falls of the National Academy of Science Committee on Radioactive Waste Management.

Wednesday, April 25, the Branch was toured by 40 medical doctors and technologists.

Claude W. Sili, Chief
Analytical Chemistry Branch
Health Services Laboratory

Bruce Roberts Terminated April 25, 1969